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NOTES FROM PACIFIC COAST OBSERVATORIES.

NOTE ON THE SPECTRUM OF NOVA GEMINORUM NO. 2.

Early in February we received from Professor BARNARD a note stating that according to observations with the 40-inch refractor the focus of *Nova Geminorum* No. 2, which in October and November had differed by 5^{mm} from that of an ordinary star, had returned to the normal position. Similar observations have been made in past years on other novæ by Professor BARNARD, and marked changes in the character of the spectrum have been detected by his skillful eye in this way.

Soon after the receipt of this announcement we succeeded in obtaining a photograph of the spectrum of *Nova Geminorum* at the primary focus of the 60-inch reflector with a small spectrograph. A comparison of this negative with one taken on October 12th showed some very interesting differences and accounted fully for the variation of focus observed by Professor BARNARD. The October photograph showed hardly a trace of continuous spectrum, the light being concentrated in detached bright bands, of which the nebular bands at λ 4365 and λ 5007 were by far the brightest. The February photograph, on the other hand, showed a strong continuous spectrum and a marked decrease in the relative intensity of these two bands as compared with those of hydrogen.

The application of these observations to Professor BARNARD's results is quite evident. The focal length of the 40-inch objective. like that of most visually corrected objectives, is shortest for the light of wave-length about λ 5600 to which the eye is most sensitive. Accordingly, the focus of an ordinary star in which the continuous spectrum is strong is set by the eye at about the focus of the objective for light of this wave-length. In the case of *Nova Geminorum* during October and

November the absence of continuous spectrum left very little of the light of the star in the λ 5600 region. The "effective wave-length" therefore of the integrated light being determined to a considerable extent by the strong bands at λ 4365 and λ 5007, was decidedly shorter than for an ordinary star. Hence the focal length as determined by the eye was longer. In February the presence of the continuous spectrum and, to a less extent, the weakening of the two bands referred to, brought the effective wave-length back to that of an ordinary star. The change should be accompanied by a certain amount of change in color, and Professor BARNARD states that the star, which appeared bluish-white in October, was white in February.

A marked feature of the February photograph of the spectrum is the very great intensity of the principal series line of hydrogen at λ 4686. It is fully equal to the chief nebular line at λ 5007. W. S. ADAMS and F. G. PEASE.

NOTES ON THE ONE-HUNDRED-INCH TELESCOPE.

During the winter no very large amount of optical work has been performed on the 100-inch disk, altho the spherical figure has been nearly perfected. It has been found impossible to guard completely against the wide variations of temperature due to weather changes in the winter months, and accordingly it has seemed preferable to delay some of the work requiring the greatest accuracy until conditions are more favorable. In the meantime the 60-inch plane mirror to be used in testing the parabolization of the large disk has been completed. In addition, certain changes have been made on the grinding machine to facilitate the use of a small tool in parabolizing.

The mounting has made considerable progress at the Fore River Shipbuilding Works at Quincy, Massachusetts. Among the portions already cast and machined are the north and south pedestals (the former in four sections), the mercury tanks and floats, and portions of the polar axis. Meanwhile the driving clock has been under construction in Pasadena and is nearly ready for assembling. According to present plans the entire mounting, with the exception of a portion of the tube and the driving mechanism, will be erected at Quincy previous to shipment.